PTO/SB/08A (10-01)

Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

M4065.0475/P475

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

NOV 0 5 2002

Sheet

1

of

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number 09/938,672

Filling Date August 27, 2001

First Named Inventor John T. Moore

Art Unit 2152

Examiner Name T. Washington

8

			U.S. PA	TENT DOCUMENTS	
	C'1-	Document Number	Publication Date	Name of Patentee or Applicant	Pages, Columns, Lines, Where Relevant
Examiner Initials*	Cite No.1	Number-Kind Code <sup>2</sup> (if known)		of Cited Document	Passages or Relevant Figures Appear
LINP	AA	6,388,324	05/14/2002	Kozicki et al.	
ı,	AB	US 2002/0000666	01/03/2002	Kozicki et al.	EIVED
	AC	5,500,532	03/19/1996	Kozicki et al.	
	AD	6,418,049	07/09/2002	Kozicki et al.	6 2002
_	AE	5,751,012	05/12/1998	Wolstenholme et al.	
4	AF	5,789,277	08/04/1998	Zahorik et al. Technology	Center 2100
LINO	AG	6,348,365	02/19/2202	Moore et al.	501101 Z 100

Attorney Docket Number

f		FOREI	GN PATENT	DOCUMENTS		
F	Cita	Foreign Patent Document	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant	
Examiner Initials*	Cite No.1	Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear	
MIN	BA	WO 02/21542	03/14/2002	Kozicki et al.		
USP	ВВ	WO 00/48196	08/17/2000	Kozicki et al.		
LIST	ВС	WO 97/48032	12/18/1997	Kozicki et al.		
4151	BD	WO 99/28914	06/10/1999	Kozicki et al.		

Examiner	Date
Signature	Considered

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

<sup>&</sup>lt;sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See attached Kinds Codes of USPTO Patent Documents at <a href="www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (10-01)

Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

NOV 0 5 2002 A

Complete if Known Substitute for form 1449B/PTO Application Number 09/938,672 August 27, 2001 RECEIVED INFORMATION DISCLOSURE Filing Date STATEMENT BY APPLICANT First Named Inventor John T. Moore 2152 Group Art Unit (use as many sheets as necessary) T. Washington M4065.0475 PC4450 Center 2100 Examiner Name 2 8 Sheet of Attorney Docket Number

Examiner	Cite	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the	Τ²			
nitials	No.1 Item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue nur publisher, city and/or country where published.					
MAS	CA	Abdel-All, A.; Elshafie,A.; Elhawary, M.M., DC electric-field effect in bulk and thin-film Ge5As38Te57 chalcogenide glass, Vacuum 59 (2000) 845-853.				
	СВ	Adler, D.; Moss, S.C., Amorphous memories and bistable switches, J. Vac. Sci. Technol. 9 (1972) 1182-1189.				
	СС	Adler, D.; Henisch, H.K.; Mott, S.N., The mechanism of threshold switching in amorphous alloys, Rev. Mod. Phys. 50 (1978) 209-220.	+			
	CD	Afifi, M.A.; Labib, H.H.; El-Fazary, M.H.; Fadel, M., Electrical and thermal properties of chalcogenide glass system Se75Ge25-xSbx, Appl. Phys. A 55 (1992) 167-169.	T			
	CE	Afifi,M.A.; Labib, H.H.; Fouad, S.S.; El-Shazly, A.A., Electrical & thermal conductivity of the amorphous semiconductor GexSe1-x, Egypt, J. Phys. 17 (1986) 335-342.				
	CF	Alekperova, Sh.M.; Gadzhieva, G.S., Current-Voltage characteristics of Ag2Se single crystal near the phase transition, Inorganic Materials 23 (1987) 137-139.	Ī			
	CG	Aleksiejunas, A.; Cesnys, A., Switching phenomenon and memory effect in thin-film heterojunction of polycrystalline selenium-silver selenide, Phys. Stat. Sol. (a) 19 (1973) K169-K171.				
	СН	Angell, C.A., Mobile ions in amorphous solids, Annu. Rev. Phys. Chem. 43 (1992) 693-717.	T			
	CI	Aniya, M., Average electronegativity, medium-range-order, and ionic conductivity in superionic glasses, Solid state lonics 136-137 (2000) 1085-1089.				
	CJ	Asahara, Y.; Izumitani, T., Voltage controlled switching in Cu-As-Se compositions, J. Non-Cryst. Solids 11 (1972) 97-104.				
	CK	Asokan, S.; Prasad, M.V.N.; Parthasarathy, G.; Gopal, E.S.R., Mechanical and chemical thresholds in IV-VI chalcogenide glasses, Phys. Rev. Lett. 62 (1989) 808-810				
	CL	Baranovskii, S.D.; Cordes, H., On the conduction mechanism in ionic glasses, J. Chem. Phys. 111 (1999) 7546-7557.				
	СМ	Belin, R.; Taillades, G.; Pradel, A.; Ribes, M., Ion dynamics in superionic chalcogenide glasses: complete conductivity spectra, Solid state Ionics 136-137 (2000) 1025-1029.				
	CN	Belin, R.; Zerouale, A.; Pradel, A.; Ribes, M., Ion dynamics in the argyrodite compound Ag7GeSe5I: non-Arrhenius behavior and complete conductivity spectra, Solid State Ionics 143 (2001) 445-455.				
	CO	Benmore, C.J.; Salmon, P.S., Structure of fast ion conducting and semiconducting glassy chalcogenide alloys, Phys. Rev. Lett. 73 (1994) 264-267.				
	CP	Bernede, J.C., Influence du metal des electrodes sur les caracteristiques courant-tension des structures M-Ag2Se-M, Thin solid films 70 (1980) L1-L4.				
	CQ	Bernede, J.C., Polarized memory switching in MIS thin films, Thin Solid Films 81 (1981) 155-160.				
	CR	Bernede, J.C., Switching and silver movements in Ag2Se thin films, Phys. Stat. Sol. (a) 57 (1980) K101-K104.				
	CS	Bernede, J.C.; Abachi, T., Differential negative resistance in metal/insulator/metal structures with an upper bilayer electrode, Thin solid films 131 (1985) L61-L64.				
	СТ	Bernede, J.C.; Conan, A.; Fousenan't, E.; El Bouchairi, B.; Goureaux, G., Polarized memory switching effects in Ag2Se/Se/M thin film sandwiches, Thin solid films 97 (1982) 165-171.				
	CU	Bernede, J.C.; Khelil, A.; Kettaf, M.; Conan, A., Transition from S- to N-type differential negative resistance in Al-Al2O3-Ag2-xSe1+x thin film structures, Phys. Stat. Sol. (a) 74 (1982) 217-224.				
$\downarrow$	CV	Bondarev, V.N.; Pikhitsa, P.V., A dendrite model of current instability in RbAg4I5, Solid State Ionics 70/71 (1994) 72-76.				

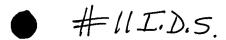
PTO/SB/08B (10-01)
Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT Filing Date

Complete if Known **Application Number** 09/938,672 August 27, 2001 John T. Moore First Named Inventor 2152 Group Art Unit **Examiner Name** 

(use as many sheets as necessary) T. Washington M4065.0475/**Pashinology Center 2 100** 8 Sheet 3 of Attorney Docket Number

UN		Glasses, Asian Journal of Physics (2000) 9, 709-72.
	СХ	Boolchand, P.; Bresser, W.J., Mobile silver ions and glass formation in solid electrolytes, Nature 410 (2001) 1070-1073.
	CY	Boolchand, P.; Georgiev, D.G.; Goodman, B., Discovery of the Intermediate Phase in Chalcogenide Glasses, J. Optoelectronics and Advanced Materials, 3 (2001), 703
	CZ	Boolchand, P.; Selvanathan, D.; Wang, Y.; Georgiev, D.G.; Bresser, W.J., Onset of rigidity in steps in chalcogenide glasses, Properties and Applications of Amorphous Materials, M.F. Thorpe and Tichy, L. (eds.) Kluwer Academic Publishers, the Netherlands, 2001, pp. 97-132.
	CA1	Boolchand, P.; Enzweiler, R.N.; Tenhover, M., Structural ordering of evaporated amorphous chalcogenide alloy films: role of thermal annealing, Diffusion and Defect Data Vol. 53-54 (1987) 415-420.
	CB1	Boolchand, P.; Grothaus, J.; Bresser, W.J.; Suranyi, P., Structural origin of broken chemical order in a GeSe2 glass, Phys. Rev. B 25 (1982) 2975-2978.
	CC1	Boolchand, P.; Grothaus, J.; Phillips, J.C., Broken chemical order and phase separation in GexSe1-x glasses, Solid state comm. 45 (1983) 183-185.
	CD1	Boolchand, P., Bresser, W.J., Compositional trends in glass transition temperature (Tg), network connectivity and nanoscale chemical phase separation in chalcogenides, Dept. of ECECS, Univ. Cincinnati (October 28, 1999) 45221-0030.
	CE1	Boolchand, P.; Grothaus, J, Molecular Structure of Melt-Quenched GeSe2 and GeS2 glasses compared, Proc. Int. Conf. Phys. Semicond. (Eds. Chadi and Harrison) 17 <sup>th</sup> (1985) 833-36.
	CF1	Bresser, W.; Boolchand, P.; Suranyi, P., Rigidity percolation and molecular clustering in network glasses, Phys. Rev. Lett. 56 (1986) 2493-2496.
	CG1	Bresser, W.J.; Boolchand, P.; Suranyi, P.; de Neufville, J.P, Intrinsically broken chalcogen chemical order in stoichiometric glasses, Journal de Physique 42 (1981) C4-193-C4-196.
	CH1	Bresser, W.J.; Boolchand, P.; Suranyi, P.; Hernandez, J.G., Molecular phase separation and cluster size in GeSe2 glass, Hyperfine Interactions 27 (1986) 389-392.
	CI1	Cahen, D.; Gilet, JM.; Schmitz, C.; Chernyak, L.; Gartsman, K.; Jakubowicz, A., Room-Temperature, electric field induced creation of stable devices in CuInSe2 Crystals, Science 258 (1992) 271-274.
	CJ1	Chatterjee, R.; Asokan, S.; Titus, S.S.K., Current-controlled negative-resistance behavior and memory switching in bulk As-Te-Se glasses, J. Phys. D: Appl. Phys. 27 (1994) 2624-2627.
	CK1	Chen, C.H., Tai, K.L., Whisker growth induced by Ag photodoping in glassy GexSe1-x films, Appl. Phys. Lett. 37 (1980) 1075-1077.
	CL1	Chen, G.; Cheng, J., Role of nitrogen in the crystallization of silicon nitride-doped chalcogenide glasses, J. Am. Ceram. Soc. 82 (1999) 2934-2936.
	CM1	Chen, G.; Cheng, J.; Chen, W., Effect of Si3N4 on chemical durability of chalcogenide glass, J. Non-Cryst. Solids 220 (1997) 249-253.
	CN1	Cohen, M.H.; Neale, R.G.; Paskin, A., A model for an amorphous semiconductor memory device, J. Non-Cryst. Solids 8-10 (1972) 885-891.
	CO1	Croitoru, N.; Lazarescu, M.; Popescu, C.; Telnic, M.; and Vescan, L., Ohmic and non-ohmic conduction in some amorphous semiconductors, J. Non-Cryst. Solids 8-10 (1972) 781-786.
	CP1	Dalven, R.; Gill, R., Electrical properties of beta-Ag2Te and beta-Ag2Se from 4.2 to 300K, J. Appl. Phys. 38 (1967) 753-756.
	CQ1	Davis, E.A., Semiconductors without form, Search 1 (1970) 152-155.
	CR1	Dearnaley, G.; Stoneham, A.M.; Morgan, D.V., Electrical phenomena in amorphous oxide films, Rep. Prog. Phys. 33 (1970) 1129-1191.
	CS1	Dejus, R.J.; Susman, S.; Volin, K.J.; Montague, D.G.; Price, D.L., Structure of Vitreous Ag-Ge-Se, J. Non-Cryst. Solids 143 (1992) 162-180.
1	CT1	den Boer, W., Threshold switching in hydrogenated amorphous silicon, Appl. Phys. Lett. 40 (1982) 812-813.
4155	CU1	Drusedau, T.P.; Panckow, A.N.; Klabunde, F., The hydrogenated amorphous



PTO/SB/08B (10-01)

Approved for use through 10/31/2002.OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Substitute for form 1449B/PTO

Complete if Known 09/938,672 **Application Number** August 27, 2001 Filing Date First Named Inventor John T. Moore NOV 0 6 2002 2152 Group Art Unit ter 2100

· <b>y</b>				Oroup / iii Oriii	12.102	
1	(use as man	y sheets as nece	essary)	Examiner Name	T. Washington	Technology Cent
Sheet 4 of 8		Attorney Docket Number	M4065.0475/P475			
	silicon/r	nanodisperse	metal (SIMA)	) system-Films of unique e	lectronic properties J	Non-

	silicon/nanodisperse metal (SIMAL) system-Films of unique electronic properties, J. Non-Cryst. Solids 198-200 (1996) 829-832.
CV1	El Bouchairi, B.; Bernede, J.C.; Burgaud, P., Properties of Ag2-xSe1+x/n-Si diodes, Thin Solid Films 110 (1983) 107-113.
CW1	El Gharras, Z.; Bourahla, A.; Vautier, C., Role of photoinduced defects in amorphous GexSe1-x photoconductivity, J. Non-Cryst. Solids 155 (1993) 171-179.
CX1	El Ghrandi, R.; Calas, J.; Galibert, G.; Averous, M., Silver photodissolution in amorphous chalcogenide thin films, Thin Solid Films 218 (1992)259-273.
CY1	El Ghrandi, R.; Calas, J.; Galibert, G., Ag dissolution kinetics in amorphous GeSe5.5 thin films from "in-situ" resistance measurements vs time, Phys. Stat. Sol. (a) 123 (1991) 451-460.
CZ1	El-kady, Y.L., The threshold switching in semiconducting glass Ge21Se17Te62, Indian J. Phys. 70A (1996) 507-516.
CA2	Elliott, S.R., A unified mechanism for metal photodissolution in amorphous chalcogenide materials, J. Non-Cryst. Solids 130 (1991) 85-97.
CB2	Elliott, S.R., Photodissolution of metals in chalcogenide glasses: A unified mechanism, J. Non-Cryst. Solids 137-138 (1991) 1031-1034.
CC2	Elsamanoudy, M.M.; Hegab, N.A.; Fadel, M., Conduction mechanism in the pre-switching state of thin films containing Te As Ge Si, Vacuum 46 (1995) 701-707.
CD2	El-Zahed, H.; El-Korashy, A., Influence of composition on the electrical and optical properties of Ge20BixSe80-x films, Thin Solid Films 376 (2000) 236-240.
CE2	Fadel, M., Switching phenomenon in evaporated Se-Ge-As thin films of amorphous chalcogenide glass, Vacuum 44 (1993) 851-855.
CF2	Fadel, M.; El-Shair, H.T., Electrical, thermal and optical properties of Se75Ge7Sb18, Vacuum 43 (1992) 253-257.
CG2	Feng, X.; Bresser, W.J.; Boolchand, P., Direct evidence for stiffness threshold in Chalcogenide glasses, Phys. Rev. Lett. 78 (1997) 4422-4425.
	Feng, X.; Bresser, W.J.; Zhang, M.; Goodman, B.; Boolchand, P., Role of network connectivity on the elastic, plastic and thermal behavior of covalent glasses, J. Non-Cryst. Solids 222 (1997) 137-143.
CI2	Fischer-Colbrie, A.; Bienenstock, A.; Fuoss, P.H.; Marcus, M.A., Structure and bonding in photodiffused amorphous Ag-GeSe2 thin films, Phys. Rev. B 38 (1988) 12388-12403.
CJ2	Fleury, G.; Hamou, A.; Viger, C.; Vautier, C., Conductivity and crystallization of amorphous selenium, Phys. Stat. Sol. (a) 64 (1981) 311-316.
CK2	Fritzsche, H, Optical and electrical energy gaps in amorphous semiconductors, J. Non-Cryst. Solids 6 (1971) 49-71.
CL2	Fritzsche, H., Electronic phenomena in amorphous semiconductors, Annual Review of Materials Science 2 (1972) 697-744.
CM2	Gates, B.; Wu, Y.; Yin, Y.; Yang, P.; Xia, Y., Single-crystalline nanowires of Ag2Se can be synthesized by templating against nanowires of trigonal Se, J. Am. Chem. Soc. (2001) currently ASAP.
CN2	Gosain, D.P.; Nakamura, M.; Shimizu, T.; Suzuki, M.; Okano, S., Nonvolatile memory based on reversible phase transition phenomena in telluride glasses, Jap. J. Appl. Phys. 28 (1989) 1013-1018.
CO2	Guin, JP.; Rouxel, T.; Keryvin, V.; Sangleboeuf, JC.; Serre, I.; Lucas, J., Indentation creep of Ge-Se chalcogenide glasses below Tg: elastic recovery and non-Newtonian flow, J. Non-Cryst. Solids 298 (2002) 260-269.
CP2	Guin, JP.; Rouxel, T.; Sangleboeuf, JC; Melscoet, I.; Lucas, J., Hardness, toughness, and scratchability of germanium-selenium chalcogenide glasses, J. Am. Ceram. Soc. 85 (2002) 1545-52.
CQ2	Gupta, Y.P., On electrical switching and memory effects in amorphous chalcogenides, J. Non-Cryst. Sol. 3 (1970) 148-154.
	CW1 CX1 CX1 CZ1 CZ2 CB2 CC2 CC2 CC2 CC2 CC4 CC4 CC4 CC4 CC4 CC

=11 I.D.S.

PTO/SB/08B (10-01)
Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known Substitute for form 1449B/PTO 09/938,672 Application Number INFORMATION DISCLOSURE August 27, 2001 Filing Date STATEMENT BY APPLICANT First Named Inventor John T. Moore 2152 Group Art Unit Technology Center 2100 (use as many sheets as necessary) T. Washington Examiner Name Sheet 5 8 of Attorney Docket Number M4065.0475/P475

					/ morriey Booker Hamber	1014003.0473/F473	
MY	CR2			Stiegler, H., New experience		e-controlled switching effect in 408-414.	
	CS2	Haifz, M.M.	; Ibrah		Hammad, F.H., Effect	of composition on the structure	
	CT2	Hajto, J.; Reeffects in m	ose, M etal/a	I.J.; Osborne, I.S.; Sne Si:H/metal devices, Int	ll, A.J.; Le Comber, P. . J. Electronics 73 (19	.G.; Owen, A.E., Quantization 992) 911-913.	1
	CU2	Si:H/metal i (2000) 1058	room t 3-1061	emperature quantised i	resistance devices, J.	measurements on metal/a- Non-Cryst. Solids 266-269	
	CV2	resistance (1996) 825-	effects 828.	in metal-a-Si:H-metal	thin film structures, J.	n temperature quantized Non-Cryst. Solids 198-200	
	CW2	ballistic elec 369.	ctron e	ffects in metal-amorph	ous silicon structures,	., Analogue memory and Phil. Mag. B 63 (1991) 349-	
	CX2	Japan. J. A	ppl. Pl	nys. 13 (1974) 1163-11	64.	switching in amorphous Se film,	
	CY2	chalcogenic	le sem	el, M.; Sedeek, K., Mer niconductors, Vacuum 4	15 (1994) 459-462.		
	CZ2	Ag-photodo	ped a	morphous As2S3 films,	J. Appl. Phys. 47 (19	nd behavior of Ag dendrite in 76) 2767-2772.	
	CA3	Hong, K.S.; J. Non-Crys	Speye t. Soli	er, R.F., Switching beha ds 116 (1990) 191-200	avior in II-IV-V2 amorp	phous semiconductor systems,	
	CB3	Hosokawa, threshold co	S., Ato	omic and electronic struition, J. Optoelectronic	ctures of glassy Gext and Advanced Mate	Se1-x around the stiffness rials 3 (2001) 199-214.	
	CC3	devices, J. I	Non-C	ryst. Solids 227-230 (1	998) 1187-1191.	ning in Cr/p+a-/Si:H/V thin film	
	CD3	Hu, J.; Hajto non-metal tr (1996) 37-5	ransitio	nell, A.J.; Owen, A.E.; on in Cr-hydrogenated	Rose, M.J., Capacitar amorphous Si-V thin-f	nce anomaly near the metal- film devices, Phil. Mag. B. 74	
	CE3	devices, Phi	il. Mag	. B 80 (2000) 29-43.		bility in Cr-p+a-Si:H-V thin film	Ī
	CF3	semiconduc	ting gl	.; Kikuchi, M.; Tanaka, asses As-Te-Ge, Solid	State Comm. 8 (1970	0) 153-155.	
	CG3	amorphous	films c	of Ge2S3, J. Non-Cryst	Solids 35 & 36 (1980	anced diffusion of Ag in 0) 1061-1066.	
	CH3	clustering of	Ag at	oms, J. Non-Cryst. Sol	ids 262 (2000) 135-14		
	CI3	Solid Films	40 (19	77) L15-L18.		films under pulsed bias, Thin	
	CJ3	switching, P	hys. S	tat. Sol. (a) 13 (1972) ł	<105-K109.	amorphous As2Se7 before	
	CK3	Bull. 8 (1973	3) 433-	-442.		ous alloy As2Se5, Mat. Res.	
	CL3	Solids 8-10	(1972)	538-543.		emiconductors, J. Non-Cryst.	
	СМЗ	amorphous induced phe	Ag-Ge nome	-S and Ag-Ge-Se films na of both systems, J. /	and comparison of pl Appl. Phys. 79 (1996)	structural properties of hotoinduced and thermally 9096-9104.	
105	CN3	Kawaguchi, photodoping	T.; Ma	isui, K., Analysis of cha alcogenide film, Japn. J	inge in optical transmi I. Appl. Phys. 26 (198	ission spectra resulting from Ag 7) 15-21.	

PTO/SB/08B (10-01)
Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Attorney Docket Number M4065.0475/P475

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

of

8

6

Sheet

Substitute for form 1449B/PTO	Complete if Known			
	Application Number	09/938,672	RECEIVED	
INFORMATION DISCLOSURE	Filing Date	August 27, 2001	HEOEIVED	
STATEMENT BY APPLICANT	First Named Inventor	John T. Moore	NOV 0 6 2002	
	Group Art Unit	2152	Table	
(use as many sheets as necessary)	Examiner Name	T. Washington	Technology Center 2100	

CO3 Kawasaki, M.; Kawamura, J.; Nakamura, Y.; Aniya, M., Ionic conductivity of Agx(GeSe3)1-x (0<-x<-0.571) glasses, Solid state lonics 123 (1999) 259-269.  CP3 Kluge, G.; Thomas, A.; Klabes, R.; Grotzschel, R., Silver photodiffusion in amorphous GeSe100-x, J. Non-Cryst. Solids 124 (1990) 186-193.  CQ3 Kolobov, A.V., On the origin of p-type conductivity in amorphous chalcogenides, J. Non-Cryst. Solids 199-200 (1996) 728-731.  CR3 Kolobov, A.V., Lateral diffusion of silver in vitreous chalcogenide films, J. Non-Cryst. Solids 137-138 (1991) 1027-1030.  CS3 Korkinova, Ts.N.; Andreichin, R.E., Chalcogenide glass polarization and the type of contacts, J. Non-Cryst. Solids 194 (1998) 256-259.  CT3 Korkinova, Ts.N.; Andreichin, R.E., Chalcogenide glass polarization and the type of contacts, J. Non-Cryst. Solids 194 (1998) 256-259.  CT3 Korkina, M.F.; Afif, M.A.; Labib, H.H.; Hegab, N.A.; Abdel-Aziz, M.M., Memory switching in amorphous GeSe11 chalcogenide semiconductor films, Thin Solid Films 240 (1994) 143-146.  CU3 Lakshminarayan, K.N.; Srivastava, K.K.; Panwar, O.S.; Dumar, A., Amorphous semiconductor devices: memory and switching mechanism, J. Instn Electronics & Telecom. Engrs 27 (1981) 16-19.  CV3 Lai, M.; Goyal, N., Chemical bond approach to study the memory and threshold switching chalcogenide glasses, Indian Journal of pure & appl. phys. 29 (1991) 303-304.  CW3 Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.  CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. I. 1 (1972) 656-146.  CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1652.  CX3 Matsushita, T.; Yamagami, T.; Okuda, M. Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CX4 Matsurier, F.; Levy, M.; Souquet, J.L	0.1001		3 Autority Booker Number 1014003.047 37F 473
<ul> <li>CP3 Kluge, G.; Thomas, A.; Klabes, R.; Grotzschel, R., Silver photodiffusion in amorphous GexSe100-x. J. Non-Cryst. Solids 124 (1990) 186-193.</li> <li>CQ3 Kolobov, A.V., On the origin of p-type conductivity in amorphous chalcogenides, J. Non-Cryst. Solids 198-200 (1996) 728-731.</li> <li>CR3 Kolobov, A.V., Lateral diffusion of silver in vitreous chalcogenide films, J. Non-Cryst. Solids 137-138 (1991) 1027-1030.</li> <li>CS3 Korkinova, Ts.N.; Andreichin, R.E., Chalcogenide glass polarization and the type of contacts, J. Non-Cryst. Solids 194 (1996) 256-259.</li> <li>CT3 Korka, M.F.; Affi, M.A.; Labib, H.H.; Hegab, N.A.; Abdel-Aziz, M.M., Memory switching in amorphous GeSe11 chalcogenide semiconductor films, Thin Solid Films 240 (1994) 143-146.</li> <li>CU3 Lakshminarayan, K.N.; Srivastava, K.K.; Panwar, O.S.; Dumar, A., Amorphous semiconductor devices: memory and switching mechanism, J. Instn Electronics &amp; Telecom. Engrs 27 (1981) 16-19.</li> <li>CV3 Lal, M.; Goyal, N., Chemical bond approach to study the memory and threshold switching chalcogenide glasses, Indian Journal of pure &amp; appl. phys. 29 (1991) 303-304.</li> <li>CW3 Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.</li> <li>CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.</li> <li>CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.</li> <li>C23 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.</li> <li>CA4 Mazurier, F.; Levy, M.; Souquet, J.L, Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal of Physicy or vigor origh of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst.</li></ul>	LAY	CO3	
<ul> <li>Kolobov, A.V., On the origin of p-type conductivity in amorphous chalcogenides, J. Non-Cryst. Solids 198-200 (1996) 728-731.</li> <li>CR3 Kolobov, A.V., Lateral diffusion of silver in vitreous chalcogenide films, J. Non-Cryst. Solids 137-138 (1991) 1027-1030.</li> <li>CS3 Korkinova, Ts.N.; Andreichlin, R.E., Chalcogenide glass polarization and the type of contacts, J. Non-Cryst. Solids 194 (1996) 256-259.</li> <li>CT3 Kofkata, M.F.; Afff, M.A.; Labib, H.H.; Hegab, N.A.; Abdel-Aziz, M.M., Memory switching in amorphous GeSeTI chalcogenide semiconductor films, Thin Solid Films 240 (1994) 143-146.</li> <li>CU3 Latshminarayan, K.N.; Srivastava, K.K.; Panwar, O.S.; Dumar, A., Amorphous semiconductor devices: memory and switching mechanism, J. Inst Electronics &amp; Telecom. Engrs 27 (1981) 16-19.</li> <li>CV3 Lal, M.; Goyal, N., Chemical bond approach to study the memory and threshold switching chalcogenide glasses, Indian Journal of pure &amp; appl. phys. 29 (1991) 303-304.</li> <li>CW3 Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.</li> <li>CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.</li> <li>CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 1657-1662.</li> <li>CZ4 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 2006.</li> <li>CA4 Mazurier, F.; Levy, M.; Souquet, J.L, Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal of Physical V2 (1992) C2-185 - C2-188.</li> <li>CB4 Messoussi, R.; Bernede, J. C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of MiSe structures (M-Ni,Bil), Mat. Chem. And Phys. 2</li></ul>		CP3	Kluge, G.; Thomas, A.; Klabes, R.; Grotzschel, R., Silver photodiffusion in amorphous
CS3 Korkinova, Ts.N.; Andreichin,R.E., Chalcogenide glass polarization and the type of contacts, J. Non-Cryst. Solids 194 (1996) 256-259.  CT3 Kotkata, M.F.; Affi, M.A.; Labib, H.H.; Hegab, N.A.; Abdel-Aziz, M.M., Memory switching in amorphous GeSeTI chalcogenide semiconductor films, Thin Solid Films 240 (1994) 143-146.  CU3 Lakshminarayan, K.N.; Srivastava, K.K.; Panwar, O.S.; Dumar, A., Amorphous semiconductor devices: memory and switching mechanism, J. Instr Electronics & Telecom. Engrs 27 (1981) 16-19.  CV3 Lal, M.; Goyal, N., Chemical bond approach to study the memory and threshold switching chalcogenide glasses, Indian Journal of pure & appl. phys. 29 (1991) 303-304.  CW3 Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.  CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.  CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.  CX3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, Jt., Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J. C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of MrSe structures (M=Nl,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Milkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory. J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Milkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1978		CQ3	Kolobov, A.V., On the origin of p-type conductivity in amorphous chalcogenides, J. Non-Cryst.
Non-Cryst. Solids 194 (1996) 256-259.  CT3 Kotkata, M.F.; Afff, M.A.; Labib, H.H.; Hegab, N.A.; Abdel-Aziz, M.M., Memory switching in amorphous GeSeTI chalcogenide semiconductor films, Thin Solid Films 240 (1994) 143-146.  CU3 Lakshminarayan, K.N.; Srivastava, K.K.; Panwar, O.S.; Dumar, A., Amorphous semiconductor devices: memory and switching mechanism, J. Instn Electronics & Telecom. Engrs 27 (1981) 16-19.  CV3 Lai, M.; Goyal, N., Chemical bond approach to study the memory and threshold switching chalcogenide glasses, Indian Journal of pure & appl. phys. 29 (1991) 303-304.  CW3 Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.  CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.  CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.  CZ3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, J.L., Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,B), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 39848-3851.  CC4 Mitkova, M.; World, M., Microscopic origin of the glass forming tendency in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 39848-3851.  CC4 Miyatani, Sy., Electrical properties of Ag		L	Kolobov, A.V., Lateral diffusion of silver in vitreous chalcogenide films, J. Non-Cryst. Solids 137-138 (1991) 1027-1030.
amorphous GeSeTI chalcogenide semiconductor films, Thin Solid Films 240 (1994) 143-146.  CU3  Lakshminarayan, K.N.; Srivastava, K.K.; Panwar, O.S.; Dumar, A., Amorphous semiconductor devices: memory and switching mechanism, J. Instn Electronics & Telecom. Engrs 27 (1981) 16-19.  CV3  Lal, M.; Goyal, N., Chemical bond approach to study the memory and threshold switching chalcogenide glasses, Indian Journal of pure & appl. phys. 29 (1991) 303-304.  CW3  Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.  CX3  Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.  CY3  Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1606.  CX4  Mazurier, F.; Levy, M.; Souquet, J.L, Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4  Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of MSe structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4  Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4  Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4  Mikyani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4  Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 14 (1959) 996-1002.  CI4  Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4  Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys.			Non-Cryst. Solids 194 (1996) 256-259.
devices: memory and switching mechanism, J. Instn Electronics & Telecom. Engrs 27 (1981) 16-19.  CV3 Lal, M.; Goyal, N., Chemical bond approach to study the memory and threshold switching chalcogenide glasses, Indian Journal of pure & appl. phys. 29 (1991) 303-304.  CW3 Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.  CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.  CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.  CZ3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, J.L, Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185- C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhída, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1953) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CN4 Nakayama, K.; Klagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide th		L	amorphous GeSeTl chalcogenide semiconductor films, Thin Solid Films 240 (1994) 143-146.
chalcogenide glasses, Indian Journal of pure & appl. phys. 29 (1991) 303-304.  CW3 Leimer, F.; Stotzel, H.; Kottwitz, A., Isothermal electrical polarisation of amorphous GeSe films with blocking At contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.  CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.  CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.  CZ3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, J.L, Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A			devices: memory and switching mechanism, J. Instn Electronics & Telecom. Engrs 27 (1981) 16-19.
with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.  CX3 Leung, W.; Cheung, N.; Neureuther, A.R., Photoinduced diffusion of Ag in GexSe1-x glass, Appl. Phys. Lett. 46 (1985) 543-545.  CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.  CZ3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, J.L., Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-559.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (200			chalcogenide glasses, Indian Journal of pure & appl. phys. 29 (1991) 303-304.
Appl. Phys. Lett. 46 (1985) 543-545.  CY3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO2 system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.  CZ3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, J.L., Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CC4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CC7 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous			with blocking Al contacts influenced by Poole-Frenkel conduction, Phys. Stat. Sol. (a) 29 (1975) K129-K132.
system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.  CZ3 Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on amorphous selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, J.L, Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			Appl. Phys. Lett. 46 (1985) 543-545.
selenium thin films, Jpn. J. Appl. Phys. 11 (1972) 606.  CA4 Mazurier, F.; Levy, M.; Souquet, J.L., Reversible and irreversible electrical switching in TeO2-V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.
V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.  CB4 Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., lonic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			
M/Se structures (M=Ni,Bi), Mat. Chem. And Phys. 28 (1991) 253-258.  CC4 Mitkova, M.; Boolchand, P., Microscopic origin of the glass forming tendency in chalcogenides and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			V2O5 based glasses, Journal de Physique IV 2 (1992) C2-185 - C2-188.
and constraint theory, J. Non-Cryst. Solids 240 (1998) 1-21.  CD4 Mitkova, M.; Kozicki, M.N., Silver incorporation in Ge-Se glasses used in programmable metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.		CB4	Messoussi, R.; Bernede, J.C.; Benhida, S.; Abachi, T.; Latef, A., Electrical characterization of
metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.  CE4 Mitkova, M.; Wang, Y.; Boolchand, P., Dual chemical role of Ag as an additive in chalcogenide glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.		CC4	
glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.  CF4 Miyatani, Sy., Electronic and ionic conduction in (AgxCu1-x)2Se, J. Phys. Soc. Japan 34 (1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.		CD4	metallization cell devices, J. Non-Cryst. Solids 299-302 (2002) 1023-1027.
(1973) 423-432.  CG4 Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.  CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			glasses, Phys. Rev. Lett. 83 (1999) 3848-3851.
CH4 Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 (1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.		CF4	
(1959) 996-1002.  CI4 Mott, N.F., Conduction in glasses containing transition metal ions, J. Non-Cryst. Solids 1 (1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.		CG4	Miyatani, Sy., Electrical properties of Ag2Se, J. Phys. Soc. Japan 13 (1958) 317.
(1968) 1-17.  CJ4 Nakayama, K.; Kitagawa, T.; Ohmura, M.; Suzuki, M., Nonvolatile memory based on phase transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			Miyatani, Sy., Ionic conduction in beta-Ag2Te and beta-Ag2Se, Journal Phys. Soc. Japan 14 1959) 996-1002.
transitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.  CK4  Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4  Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			1968) 1-17.
CK4 Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J. Appl. Phys. 39 (2000) 6157-6161.  CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.			ransitions in chalcogenide thin films, Jpn. J. Appl. Phys. 32 (1993) 564-569.
CL4 Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical parameters of GexSe1-x amorphous thin films, Jap. J. App. Phys. 15 (1976) 849-853.		CK4	Nakayama, K.; Kojima, K.; Hayakawa, F.; Imai, Y.; Kitagawa, A.; Suzuki, M., Submicron nonvolatile memory cell based on reversible phase transition in chalcogenide glasses, Jpn. J.
CM4 Narayanan, R.A.; Asokan, S.; Kumar, A., Evidence concerning the effect of topology on	$\downarrow$	CL4	Nang, T.T.; Okuda, M.; Matsushita, T.; Yokota, S.; Suzuki, A., Electrical and optical
	LIST	CM4	larayanan, R.A.; Asokan, S.; Kumar, A., Evidence concerning the effect of topology on

PTO/SB/08B (10-01)
Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Inder the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO STATEMENT BY APPLICANT (use as many sheets as necessary)

	Complete if Known	
Application Number	09/938,672	RECEIVED
Filing Date	August 27, 2001	
First Named Inventor	John T. Moore	NOV 0 6 2002
Group Art Unit	2152	Technology Center 2100
Examiner Name	T Washington	97 Penter 2100

			Examiner Name	1. wasnington	
Sheet	7	of	8	Attorney Docket Number	M4065.0475/P475

		electrical switching in chalcogenide network glasses, Phys. Rev. B 54 (1996) 4413-4415.
1.140	CN4	Neale, R.G.; Aseltine, J.A., The application of amorphous materials to computer memories,
40		IEEE transactions on electron dev. Ed-20 (1973) 195-209.
	CO4	Ovshinsky S.R.; Fritzsche, H., Reversible structural transformations in amorphous
		semiconductors for memory and logic, Mettalurgical transactions 2 (1971) 641-645.
	CP4	Ovshinsky, S.R., Reversible electrical switching phenomena in disordered structures, Phys. Rev. Lett. 21 (1968) 1450-1453.
	CQ4	Owen, A.E.; LeComber, P.G.; Sarrabayrouse, G.; Spear, W.E., New amorphous-silicon
		electrically programmable nonvolatile switching device, IEE Proc. 129 (1982) 51-54
	CR4	Owen, A.E.; Firth, A.P.; Ewen, P.J.S., Photo-induced structural and physico-chemical changes
I I		in amorphous chalcogenide semiconductors, Phil. Mag. B 52 (1985) 347-362.
	CS4	Owen, A.E.; Le Comber, P.G.; Hajto, J.; Rose, M.J.; Snell, A.J., Switching in amorphous devices, Int. J. Electronics 73 (1992) 897-906.
	CT4	Pearson, A.D.; Miller, C.E., Filamentary conduction in semiconducting glass diodes, App. Phys. Lett. 14 (1969) 280-282.
	CU4	Pinto, R.; Ramanathan, K.V., Electric field induced memory switching in thin films of the chalcogenide system Ge-As-Se, Appl. Phys. Lett. 19 (1971) 221-223.
	CV4	Popescu, C., The effect of local non-uniformities on thermal switching and high field behavior of structures with chalcogenide glasses, Solid-state electronics 18 (1975) 671-681.
	CW4	Popescu, C.; Croitoru, N., The contribution of the lateral thermal instability to the switching phenomenon, J. Non-Cryst. Solids 8-10 (1972) 531-537.
	CX4	Popov, A.I.; Geller, I.KH.; Shemetova, V.K., Memory and threshold switching effects in amorphous selenium, Phys. Stat. Sol. (a) 44 (1977) K71-K73.
	CY4	Prakash, S.; Asokan, S.; Ghare, D.B., Easily reversible memory switching in Ge-As-Te glasses, J. Phys. D: Appl. Phys. 29 (1996) 2004-2008.
	CZ4	Rahman, S.; Sivarama Sastry, G., Electronic switching in Ge-Bi-Se-Te glasses, Mat. Sci. and Eng. B12 (1992) 219-222.
	CA5	Ramesh, K.; Asokan, S.; Sangunni, K.S.; Gopal, E.S.R., Electrical Switching in germanium telluride glasses doped with Cu and Ag, Appl. Phys. A 69 (1999) 421-425.
	CB5	Rose,M.J.;Hajto,J.;Lecomber,P.G.;Gage,S.M.;Choi,W.K.;Snell,A.J.;Owen,A.E., Amorphous silicon analogue memory devices, J. Non-Cryst. Solids 115 (1989) 168-170.
	CC5	Rose, M.J.; Snell, A.J.; Lecomber, P.G.; Hajto, J.; Fitzgerald, A.G.; Owen, A.E., Aspects of non-volatility in a -Si:H memory devices, Mat. Res. Soc. Symp. Proc. V 258, 1992, 1075-1080.
	CD5	Schuocker, D.; Rieder, G., On the reliability of amorphous chalcogenide switching devices, J. Non-Cryst. Solids 29 (1978) 397-407.
	CE5	Sharma, A.K.; Singh, B., Electrical conductivity measurements of evaporated selenium films in vacuum, Proc. Indian Natn. Sci. Acad. 46, A, (1980) 362-368.
	CF5	Sharma, P., Structural, electrical and optical properties of silver selenide films, Ind. J. Of pure and applied phys. 35 (1997) 424-427.
	CG5	Snell, A.J.; Lecomber, P.G.; Hajto, J.; Rose, M.J.; Owen, A.E.; Osborne, I.L., Analogue memory effects in metal/a-Si:H/metal memory devices, J. Non-Cryst. Solids 137-138 (1991) 1257-1262.
	CH5	Snell, A.J.; Hajto, J.;Rose, M.J.; Osborne, L.S.; Holmes, A.; Owen, A.E.; Gibson, R.A.G., Analogue memory effects in metal/a-Si:H/metal thin film structures, Mat. Res. Soc. Symp. Proc. V 297, 1993, 1017-1021.
	CI5	Steventon, A.G., Microfilaments in amorphous chalcogenide memory devices, J. Phys. D: Appl. Phys. 8 (1975) L120-L122.
<b>\</b>	CJ5	Steventon, A.G., The switching mechanisms in amorphous chalcogenide memory devices, J. Non-Cryst. Solids 21 (1976) 319-329.
MOS	CK5	Stocker, H.J., Bulk and thin film switching and memory effects in semiconducting chalcogenide glasses, App. Phys. Lett. 15 (1969) 55-57.

PTO/SB/08B (10-01)

Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known Substitute for form 1449B/PTO 09/938,672 Application Number RECEIVED INFORMATION DISCLOSURE Filing Date August 27, 2001 STATEMENT BY APPLICANT First Named Inventor John T. Moore NOV 0 5 2002 Group Art Unit 2152 Technology Center 2100 (use as many sheets as necessary) T. Washington Examiner Name Sheet 8 8 of M4065.0475/P475

Attorney Docket Number

Distant P

CL5 Tanaka, K., Ionic and mixed conductions in Ag photodoping process, Mod. Phys. Lett B 4 (1990) 1373-1377. CM5 Tanaka, K.; lizima, S.; Sugi, M.; Okada, Y.; Kikuchi, M., Thermal effects on switching phenomenon in chalcogenide amorphous semiconductors, Solid State Comm. 8 (1970) 387-CN5 Thornburg, D.D., Memory switching in a Type I amorphous chalcogenide, J. Elect. Mat. 2 (1973) 3-15.Thornburg, D.D., Memory switching in amorphous arsenic triselenide, J. Non-Cryst. Solids 11 CO5 (1972) 113-120. CP5 Thornburg, D.D.; White, R.M., Electric field enhanced phase separation and memory switching in amorphous arsenic triselenide, Journal(??) (1972) 4609-4612. CQ5 Tichy, L.; Ticha, H., Remark on the glass-forming ability in GexSe1-x and AsxSe1-x systems, J. Non-Cryst. Solids 261 (2000) 277-281. CR5 Titus, S.S.K.; Chatterjee, R.; Asokan, S., Electrical switching and short-range order in As-Te glasses, Phys. Rev. B 48 (1993) 14650-14652. CS5 Tranchant, S.; Peytavin, S.; Ribes, M.; Flank, A.M.; Dexpert, H.; Lagarde, J.P., Silver chalcogenide glasses Ag-Ge-Se: lonic conduction and exafs structural investigation, Transport-structure relations in fast ion and mixed conductors Proceedings of the 6th Riso International symposium. 9-13 September 1985. CT5 Tregouet, Y.; Bernede, J.C., Silver movements in Ag2Te thin films: switching and memory effects, Thin Solid Films 57 (1979) 49-54. Uemura, O.; Kameda, Y.; Kokai, S.; Satow, T., Thermally induced crystallization of amorphous CU<sub>5</sub> Ge0.4Se0.6, J. Non-Cryst. Solids 117-118 (1990) 219-221. Uttecht, R.; Stevenson, H.; Sie, C.H.; Griener, J.D.; Raghavan, K.S., Electric field induced CV5 filament formation in As-Te-Ge glass, J. Non-Cryst. Solids 2 (1970) 358-370. CD5 Viger, C.; Lefrancois, G.; Fleury, G., Anomalous behaviour of amorphous selenium films, J. Non-Cryst. Solids 33 (1976) 267-272. CX5 Vodenicharov, C.; Parvanov, S.; Petkov, P., Electrode-limited currents in the thin-film M-GeSe-M system, Mat. Chem. And Phys. 21 (1989) 447-454. Wang, S.-J.; Misium, G.R.; Camp, J.C.; Chen, K.-L.; Tigelaar, H.L., High-performance CY5 Metal/silicide antifuse, IEEE electron dev. Lett. 13 (1992)471-472. CZ5 Weirauch, D.F., Threshold switching and thermal filaments in amorphous semiconductors, App. Phys. Lett. 16 (1970) 72-73. West, W.C.; Sieradzki, K.; Kardynal, B.; Kozicki, M.N., Equivalent circuit modeling of the CA6 Ag|As0.24S0.36Ag0.40|Ag System prepared by photodissolution of Ag, J. Electrochem. Soc. 145 (1998) 2971-2974 CB6 West, W.C., Electrically erasable non-volatile memory via electrochemical deposition of multifractal aggregates, Ph.D. Dissertation, ASU 1998 CC6 Zhang, M.; Mancini, S.; Bresser, W.; Boolchand, P., Variation of glass transition temperature, Tg, with average coordination number, <m>, in network glasses: evidence of a threshold behavior in the slope |dTg/d<m>| at the rigidity percolation threshold (<m>=2.4), J. Non-Cryst. Solids 151 (1992) 149-154.

Examiner Date Signature Considered

\*EXAMINER: Initial if reference considered whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached.





PTO/SB/08A (10-01)

Approved for use through 10/31/2002.OMB 0851-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Sub	ostitute for form 1449A/PTO	,		Complete if Known			
				Application Number	09/938,672		
	<b>VFORMATION</b>			Filing Date	August 27, 2001		
S	STATEMENT I	BY	APPLICANT	First Named Inventor	John Moore		
	(1100 00 000 00	4		Art Unit	2152	RECEIVE	
	(use as many sh	eets as	s necessary)	Examiner Name	T 10/00 him at 1		
Sheet	1	of	1	Attorney Docket Number	M4065.0475/P475	DEC 1 9 2002	

Technology Center 2100

	U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No.1	Document Number  Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant		
LIV	AA	6,469,364 B1-	10-22-2002	Kozicki	Figures Appear		
MP	AE	2002/0168820 A1-	11-14-2002	Kozicki, et al.			

	FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No.1	Foreign Patent Document  Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>6</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T		
				-		T		

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

<sup>&</sup>lt;sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See attached Kinds Codes of USPTO Patent Documents at <a href="https://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

		OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Examiner Signature Manage (Lagran) (Lagran)	Date 4//	
Signature I fanal S. Jugue Orgo	Considered 7/22/2019	
1538445 v1; WZ2LQ/1.DOC	777	

<sup>&</sup>lt;sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

MAR 1 7 2003

PTO/SB/08A (10-01)
Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Returnion Act of 1905 ho persons are required to respond to a collection of information unless it contains a valid OMB control number.

Cubati	tute for form 1449A/	PTO		Complete if Known		
Substit	tute for form 1449AV	FIO		Application Number	Not Yet Assigned	
INF	ORMATI	ON DISC	LOSURE	Filing Date	February 13, 2003	
	ATEMEN			First Named Inventor	John Moore	
0.	, ( , _ , , , , , , , , , , , , , , , ,			Art Unit	2151	
	(use as man	y sheets as nece	essary)	Examiner Name	Not Yet Assigned	
Sheet	1	of	4	Attorney Docket Number	M4065.0475/P475-A	

U.S. PATENT DOCUMENTS								
Examiner Initials*	Cite No.1	Document Number  Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear			
* HDP	AA	2002/0168820 App.	11/2002	Kozicki				
1	AB	2000/0072188 App	6/2002	Gilton				
	AC	2002/0123169 App	9/2002	Moore et al.				
	AD	2002/0123248 App.	9/2002	Moore et al.				
<del></del>		3,622,319	11/1971	Sharp				
<u> </u>	AF	3,743,847	7/1973	Boland				
<u> </u>	AG	4,269,935	5/1981	Masters et al.				
<del></del>	AH.	4,312,938	1/1982	Drexler, et al.				
	Al	4,316,946	1/1982	Masters, et al.				
	AJ	4,320,191	3/1982	Yoshikawa et al.				
	AK	4,405,710	9/1983	Balasubramanyam et al.				
<del>-  </del>	AL	4,419,421	12/1983	Wichelhaus, et al.				
<u> </u>	AM	4,795,657	1/1989	Formigoni et al.				
	AN	4,847,674	7/1989	Sliwa et al.				
-		4,499,557	2/1985	Holmberg et al.				
	AP	5,177,567	1/1993	Klersy et al.				
	AQ	5,219,788	6/1993	Abernathey et al.				
	AR	5,238,862	8/1993	Blalock et al.				
+	AS	5,315,131	5/1994	Kishimoto et al.				
	AT	5,350,484	9/1994	Gardner et al.				
	AU	5,360,981	11/1994	Owen et al.				
-	AV ·	5,512,328	4/1996	Yoshimura et al.				
	AW.	5,512,773	4/1996	Wolf et al.				
<del></del>		5,726,083	3/1998	Takaishi				
		5,841,150	11/1998	Gonzalez et al.				
		5,846,889	12/1998	Harbison et al.				
_		5,920,788	7/1999	Reinberg				
		5,998,066	12/1999	Block et al.				
-		6,077,729	6/2000	Harshfield				
		6,117,720	9/2000	Harshfield	<del></del>			
	+	4	11/2000	Chiang et al.				
		6,143,604	1/2001	Liaw et al.				
	AH1 Al1	6,177,338 6,236,059	5/2001	Wolstenholme et al.	-			
	AJ1	6,297,170	10/2001	Gabriel et al.				
		6,300,684	10/2001	Gonzalez et al.				
		6,316,784	11/2001	Zahorik et al.				
		6,329,606	12/2001	Freyman et al.				
		6,350,679	2/2002	McDaniel et al.				
			4/2002	Gonzalez et al.	<del>-   </del>			
-		6,376,284	5/2002	Gonzalez et al.				
		6,391,688						
-		6,414,376	7/2002	Thakur et al.				
		6,423,628	7/2002	Li et al.				
		6,487,106	11/26/2002	Kozicki				
· ·		5,314,772	5/24/1994	Kozicki				
MDP	AU1	2002/0190350 APP	12/19/2002	Kozicki				

#13ID5

MAR 1 7 2003

PTO/SB/08A (10-01)

Approved for use through 10/31/2002.OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwon Reduction of information unless it contains a valid OMB control number.

Sub	ostitute for form 1449A/PTO			Complete if Known		
				Application Number	Not Yet Assigned	
11	<b>NFORMATION</b>	N DI	SCLOSURE	Filing Date	February 13, 2003	
l s	STATEMENT I	3Y A	APPLICANT	First Named Inventor	John Moore	
				Art Unit	2151	
	(use as many she	eets as	necessary)	Examiner Name	Not Yet Assigned	
Sheet	2	of	4	Attorney Docket Number	M4065.0475/P475-A	

LIM	AV1	2003/0027416 APP	2/6/2003	Moore
	AW1	2003/0001229 APP	1/2/2003	Moore et al.
	AX1、	2002/0106849 APP	8/8/2002	Moore
	AY1	2002/0127886 APP	9/12/2002	Moore et al.
	AZ1	2002/0123170 APP	9/5/2002	Moore et al.
	BA1	2002/0163828 APP	11/2002	Krieger et al
	BB1	6,072,716	6/2000	Jacobson et al.
	BC1	5,272,359	12/93	Nagasubramanian et al.
	BD1-	4,671,618	6/87	Wu et al.
	BE1	4,800,526	1/89	Lewis
	BF1	2003/0035314	02/20/03	Kozicki
	BG1	2003/0035315	02/20/03	Kozicki
MASS	BH1-	6,473,332	04/04/01	Ignatiev et al.

PTO/SB/08A (10-01)

Approved for use through 10/31/2002.OMB 0651-0031 U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduktion Act of 1995, net bersons are required to respond to a collection of information unless it contains a valid OMB control number.

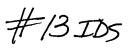
Sut	Substitute for form 1449A/PTO			Complete if Known		
				Application Number	Not Yet Assigned	
11	<b>VEORMATION</b>	1 DI	SCLOSURE	Filing Date	February 13, 2003	
S	STATEMENT B	3Y /	APPLICANT	First Named Inventor	John Moore	
				Art Unit	2151	
	(use as many she	eets as	necessary)	Examiner Name	Not Yet Assigned	
Sheet	3	of	4	Attorney Docket Number	M4065.0475/P475-A	

	FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document  Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> ( <i>if known</i> )	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>		
LAN	BA .	JP 56126916	10/1981	Akira et al.		П		
Ĺ	BB			. , , , , , , , , , , , , , , , , , , ,		П		

Examiner     [	Date
Signature	Considered

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

<sup>&</sup>lt;sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See attached Kinds Codes of USPTO Patent Documents at <a href="www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002.OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Su	bstitute for form 1449B/	PTO		Complete if Known		
- Ou				Application Number	Not Yet Assigned	
ĺÌ	NFORMATIO	ON DIS	SCLOSURE	Filing Date	February 13, 2003	
S	TATEMEN <sup>T</sup>	r BY A	PPLICANT	First Named Inventor	John Moore	
				Group Art Unit	2151	
	(use as many sheets as necessary)			Examiner Name	Not Yet Assigned	
Sheet	4	of	4	Attorney Docket Number	M4065.0475/P475-A	

		OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS						
xaminer nitials	No. 1 No. 1 Item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.							
HS	CA .	Axon Technologies Corporation, Technology Description: <i>Programmable Metalization Cell(PMC)</i> , pp. 1-6 (Pre-May 2000).						
	CB .	Helbert et al., Intralevel hybrid resist process with submicron capability, SPIE Vol. 333 SUBMICRON LITHOGRAPHY, pp. 24-29 (1982).						
	CC ,	Hilt, DISSERTATION: Materials characterization of Silver Chalcogenide Programmable Metalization Cells, Arizona State University, pp. Title page-114 (UMI Company, May 1999).						
	CD .	Hirose et al., High Speed Memory Behavior and Reliability of an Amorphous As <sub>2</sub> S <sub>3</sub> Film Doped Ag, PHYS. STAT. SOL. (a) 61, pp. 87-90 (1980).						
	CE .	Holmquist et al., Reaction and Diffusion in Silver-Arsenic Chalcogenide Glass Systems, 62 J. AMER. CERAM. Soc., No. 3-4, pp. 183-188 (March-April 1979).						
	CF .	Huggett et al., Development of silver sensitized germanium selenide photoresist by reactive sputter etching in SF <sub>8</sub> , 42 APPL. PHYS. LETT., No. 7, pp. 592-594 (April 1983).						
	CG .	Kawaguchi et al., <i>Mechanism of photosurface deposition</i> , 164-166 J. Non-CRYST. SOLIDS, pp. 1231-1234 (1993).						
	CH .	Kolobov and Elliott, Photodoping of Amorphous Chalcogenides by Metals, Advances in Physics, Vol. 40, No 5, 625-684 (1991).						
	CI \	Kozicki, et al., "Applications of Programmable Resistance Changes in Metal-doped Chalcogenides", Proceedings of the 1999 Symposium on Solid State Ionic Devices, Editors - E.D. Wachsman et al., The Electrochemical Society, Inc., 1 - 12 (1999).						
	C1 `	Kozicki, et al., Nanoscale effects in devices based on chalcogenide solid solutions, Superlattices and Microstructures, 27, 485-488 (2000).						
	CK .	Kozicki, et al., Nanoscale phase separation in Ag-Ge-Se glasses, Microelectronic Engineering, vol. 63/1-3,155-159 (2002).						
	CL .	M.N. Kozicki and M. Mitkova, Silver incorporation in thin films of selenium rich Ge-Se glasses, Proceedings of the XIX International Congress on Glass, Society for Glass Technology, 226-227 (2001).						
	CM,	McHardy et al., The dissolution of metals in amorphous chalcogenides and the effects o electron and ultraviolet radiation, 20 J. Phys. C.: Solid State Phys., pp. 4055-4075 (1987)f						
$\leftarrow$	CN .	Owen et al., Metal-Chalcogenide Photoresists for High Resolution Lithography and Sub-Micron Structures, NANOSTRUCTURE PHYSICS AND FABRICATION, pp. 447-451 (M. Reed ed. 1989).						
US	CO ,	Shimizu et al., The Photo-Erasable Memory Switching Effect of Ag Photo-Doped Chalcogenide Glasses, 46 B. CHEM SOC. JAPAN, No. 12, pp. 3662-3365 (1973).						
-								
			上					

Examiner	1/2 0/		Date	Τ.,	1 1 -
Signature	March & Vis	0110-0 seel	Considered	14	172/2003
		<del>                                      </del>			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)

Approved for use through 10/31/2002.OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paper of Bodon Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

0.100.1	stitute for form 1449A/P	TO.		Complete if Known		
Sub	stitute for form 1449AVP	10		Application Number	09/938,672	
IN	IFORMATIC	N DISC	LOSURE	Filing Date	August 27, 2001	
	TATEMENT			First Named Inventor	John Moore	
O	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Art Unit	2151	
	(use as many sheets as necessary)			Examiner Name	T. Washington	
Sheet	1	of	4	Attorney Docket Number	M4065.0475/P475	

			U.S. PA	TENT DOCUMENTS	
		Document Number	Publication Date	Name of Patentee or Applicant	Pages, Columns, Lines, Where Relevant
Examiner Initials*	Cite No. <sup>1</sup>	Number-Kind Code <sup>2</sup> (if known)	MM-DD-YYYY	of Cited Document	Passages or Relevant Figures Appear
USP	AA ·	2000/0072188 App	6/2002	Gilton	
	AB ·	2002/0123169 App	9/2002	Moore et al.	
	AC-	2002/0123248 App.	9/2002	Moore et al.	
-   -	AD ·	3,622,319	11/1971	Sharp	DECEIVED
	AΕ·	3,743,847	7/1973	Boland	RECEIVED
	AF ·	4,269,935	5/1981	Masters et al.	
	AG ·	4,312,938	1/1982	Drexler, et al.	MAR 1 9 2003
	AH	4,316,946	1/1982	Masters, et al.	
	AI ·	4,320,191	3/1982	Yoshikawa et al.	Technology Center 21
	AJ ·	4,405,710	9/1983	Balasubramanyam et al.	100miology-conto: 2
	AK ·	4,419,421	12/1983	Wichelhaus, et al.	
$\neg$	AL ·	4,795,657	1/1989	Formigoni et al.	
i	AM ·	4,847,674	7/1989	Sliwa et al.	
	AN	4,499,557	2/1985	Holmberg et al.	
	AO.	5,177,567	1/1993	Klersy et al.	
_	AP ·	5,219,788	6/1993	Abernathey et al.	
_	AQ	5,238,862	8/1993	Blalock et al.	
	AR	5,315,131	5/1994	Kishimoto et al.	
1	AS	5,350,484	9/1994	Gardner et al.	
	AT ·	5,360,981	11/1994	Owen et al.	8 7
	AU	5,512,328	4/1996	Yoshimura et al.	80 AR
	AV ·	5,512,773	4/1996	Wolf et al.	2
	1	5,726,083	3/1998	Takaishi	= 5
		5,841,150	11/1998	Gonzalez et al.	
<del></del>			12/1998	Harbison et al.	200 L F
			7/1999	Reinberg	R 00
		5,998,066	12/1999	Block et al.	0
		6,077,729	6/2000	Harshfield	
			9/2000	Harshfield	
		<del></del>	11/2000	Chiang et al.	
+		6,177,338	1/2001	Liaw et al.	
-	AI1	6,236,059	5/2001	Wolstenholme et al.	
+-	AJ1	6,297,170	10/2001	Gabriel et al.	
		6,300,684	10/2001	Gonzalez et al.	
-		<del></del>	11/2001	Zahorik et al.	
		6,329,606	12/2001	Freyman et al.	
		6,350,679	2/2002	McDaniel et al.	
+		6,376,284	4/2002	Gonzalez et al.	
		6,391,688	5/2002	Gonzalez et al.	
		6,414,376	7/2002	Thakur et al.	
-			7/2002	Li et al.	
		6,423,628 6,487,106	11/26/2002	Kozicki	
			5/24/1994	Kozicki	
<del></del>		5,314,772	12/19/2002	Kozicki	
140	AV1	2002/0190350 APP 2003/0027416 APP	2/6/2003	Moore	



PTO/SB/08A (10-01)
Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Sul	ostitute for form 1449A/PT	ro		Complete if Known		
"	35ttate 101 101111 14407 VI 1			Application Number	09/938,672	
1 11	NFORMATIO	N DIS	CLOSURE	Filing Date	August 27, 2001	
5	STATEMENT	BY A	PPLICANT	First Named Inventor	John Moore	
`	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Art Unit	2151	
	(use as many sheets as necessary)			Examiner Name	T. Washington	
Sheet	2	of	4	Attorney Docket Number	M4065.0475/P475	

				-		
11	P	AW.1	2003/0001229 APP	1/2/2003	Moore et al.	
		AX1	2002/0106849 APP	8/8/2002	Moore	
		AY1.	2002/0127886 APP	9/12/2002	Moore et al.	
		AZ1	2002/0123170 APP	9/5/2002	Moore et al.	
	-	BA1-	2002/0163828 APP	11/2002	Krieger et al	
		BB1	6,072,716	6/2000	Jacobson et al.	RECEIVED
		BC1	5,272,359	12/93	Nagasubramanian et al.	RECEIVED
		BD1	4,671,618	6/87	Wu et al.	MAR 1 9 2003
		BE1	4,800,526	1/89	Lewis	MAR 1, 9 2003
		BF1	2003/0035314	02/20/03	Kozicki	
V		BG1	2003/0035315	02/20/03	Kozicki	Technology Center 2100
L/N	P	BH1	6,473,332	04/04/01	Ignatiev et al.	

TC 2800 MAIL ROOM RECEIVED NAR 25 2003



PTO/SB/08A (10-01)

Approved for use through 10/31/2002 OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Sut	Substitute for form 1449A/PTO			Complete if Known		
				Application Number	09/938,672	
11	<b>VFORMATIC</b>	ON DISC	CLOSURE	Filing Date	August 27, 2001	
S	STATEMENT	BY AP	PLICANT	First Named Inventor	John Moore	
				Art Unit	2151	
	(use as many sheets as necessary)			Examiner Name	T. Washington	
Sheet	3	of	4	Attorney Docket Number	M4065.0475/P475	

	FOREIGN PATENT DOCUMENTS								
Examiner	Cite	Foreign Patent Document	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant				
Initials*	No.1	Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear	T⁵			
MA	BA .	JP 56126916	10/1981	Akira et al.					
	BB								

Examiner Signature Manena Vincia Biol.	Date Considered	8/18/2003
7000 (0,0)		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

RECEIVED

MAR 1 9 2003

**Technology Center 2100** 

RECEIVED
HAR 25 2003
TC 2800 HAIL ROOM

<sup>&</sup>lt;sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See attached Kinds Codes of USPTO Patent Documents at <a href="www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)
Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMP activity.

Substitute for form 1449B/PTO				Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	09/938,672	
				Filing Date	August 27, 2001	
				First Named Inventor	John Moore	
				Group Art Unit	2151	
				Examiner Name	T. Washington	
heet	4	M4	4	Attorney Docket Number	M4065.0475/P475	

		OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	
Examiner	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriets) title of the	Т-
nitials	No.1	publisher_city and/or country where published	T
MP	CA.	Axon Technologies Corporation, Technology Description: <i>Programmable Metalization Cell(PMC)</i> , pp. 1-6 (Pre-May 2000).	T
	CB	Helbert et al., Intralevel hybrid resist process with submicron capability, SPIE Vol. 333 SUBMICRON LITHOGRAPHY, pp. 24-29 (1982).	T
	CC .	Hilt, DISSERTATION: Materials characterization of Silver Chalcogenide Programmable Metalization Cells, Arizona State University, pp. Title page-114 (UMI Company, May 1999).	
	CD	STAT. Sol. (a) 61, pp. 87-90 (1980).	
	CE .	Holmquist et al., Reaction and Diffusion in Silver-Arsenic Chalcogenide Glass Systems, 62 J. AMER. CERAM. Soc., No. 3-4, pp. 183-188 (March-April 1979).	-
	CF .	Huggett et al., Development of silver sensitized germanium selenide photoresist by reactive sputter etching in SF <sub>8</sub> , 42 APPL. PHYS. LETT., No. 7, pp. 592-594 (April 1983)	
	CG ———	Rawaguchi et al., Mechanism of photosurface deposition, 164-166 J. Non-CRYST. SOLIDS, pp. 1231-1234 (1993).	-
	CH	Kolobov and Elliott, Photodoping of Amorphous Chalcogenides by Metals, Advances in Physics, Vol. 40, No 5, 625-684 (1991).	-
	CI	Kozicki, et al., "Applications of Programmable Resistance Changes in Metal-doped Chalcogenides", Proceedings of the 1999 Symposium on Solid State Ionic Devices, Editors - E.D. Wachsman et al., The Electrochemical Society, Inc., 1 - 12 (1999)	
	CJ .	Kozicki, et al., Nanoscale effects in devices based on chalcogenide solid solutions, Superlattices and Microstructures, 27, 485-488 (2000).	
	CK	Kozicki, et al., Nanoscale phase separation in Ag-Ge-Se glasses, Microelectronic Engineering, vol. 63/1-3,155-159 (2002).	
	CL	M.N. Kozicki and M. Mitkova, Silver incorporation in thin films of selenium rich Ge-Se glasses, Proceedings of the XIX International Congress on Glass, Society for Glass Technology, 226-227 (2001).	
	CM .	ultraviolet radiation, 20 J. Phys. C.: Sould State Phys. op. 4055-4075 (1097)	_
<b>V</b>	CN.	NANOSTRUCTURE PHYSICS AND FABRICATION, pp. 447-451 (M. Reed ed. 1989)	
	CO.	Shimizu et al., The Photo-Erasable Memory Switching Effect of Ag Photo-Doped Chalcogenide Glasses, 46 B. CHEM SOC. JAPAN, No. 12, pp. 3662-3365 (1973).	_
	CP_	RECEIVED	_
(	CQ		_
		MAR 1 9 2003	_
		Technology Center 2100	_

Examiner	1/2 0 /		
Signature	March & Hisaria- Pro	Date	0/1/202
Olgitature	March & Magreed- Xlea	Considered	8//8/2007

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>&</sup>lt;sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.